

COLLAPSABLE SPA ENCLOSURE
BACKGROUND OF THE INVENTION

1. TECHNICAL FIELD

5 The invention generally relates to spa enclosures. More particularly, the invention relates to a collapsable spa enclosure that may be retrofit onto existing spas without significant modifications to the existing spas. Specifically, the invention relates to a collapsable spa enclosure that is easy to temporarily install on a spa so that the users of the spa can be shielded from insects, sun, and/or
10 wind, while also being screened for privacy.

2. BACKGROUND INFORMATION

 Various spa enclosures are known in the art. Spa enclosures are desired by spa users because the enclosures can be configured to keep out insects,
15 excessive sun, cold wind, and/or neighbors eyes. The desire to keep insects away from the users of the spa has significantly increased with the West Nile Virus threat in North America. Although spa users wish to enclose their spas during certain times of the year, spa users also wish to remove their enclosures from time to time. For example, a spa user who worries about the risk of
20 mosquitos may wish to cover his spa from spring to fall while keeping the spa uncovered during the winter. Others may need a privacy screen during the winter when the leaves have fallen. Other spa users may only wish to erect the spa enclosure in windy conditions to provide a more comfortable spa

environment. There is thus a need in the art for a spa enclosure that can be quickly erected and taken down without too much trouble.

Unfortunately, many of the spa enclosures shown in the art are permanently installed, require a substantial investment to retrofit the spa, or are not collapsable for storage. One example of a substantial, essentially permanent spa enclosure includes the device disclosed in US patent 6,374,433 wherein an entire house-like structure is disposed on raised tracks so that it may be moved back and forth over the spa. Although many spa users would find such a system desirable and useful, many spa users do not have the space or money to install such a system. Other spa users do not want the house structure sitting next to their spa 365 days a year. Another substantial, permanently-installed cover is disclosed in US patent 6,079,059. This cover provides a pool cover in one position and a shade in the other position. The structure does not appear to allow users to enjoy the pool water while covering the pool. US patent 4,135,259 discloses a similar structure that requires a small building to raise and lower the structure and does not appear to allow users to enjoy the pool water while the structure is covering the pool. US patent 6,212,702 discloses a spa cover kit that includes four legs disposed outside the corners of the spa with a cover carried at the tops of the four legs. The system appears to require at least two people to disassemble the cover and requires a significant amount of space around the corners of the spa. Many existing spas are located on the corners of decks that do not provide enough space for the

support legs of the device disclosed in 6,212,702. The device also is not designed to be readily erectable and easy to take down and stored. Other enclosures of the type described above include US patent Des. 336,960, US patent 4,426,744, US patent 3,566,420, and US patent 5,148,646. All of these devices require significant structural investment, require space around the corners of the spa, or cannot be easily collapsed for storage and easily erected for installation.

Three other systems known to the inventors are disclosed in US patents 6,062,243, 5,943,709, and 4,246,663. Each of these systems includes a significant drawback when used with a spa. The system disclosed in 6,062,243 is designed to float in the water of a swimming pool. There is not enough space in a spa to use this type of system as a enclosure and the system cannot be easily collapsed for storage. The system disclosed in US patent 5,943,709 is designed to interact with specially designed connector covers and connectors that cannot be retrofit onto existing spas. This system also does not prevent insects from entering the pool area. The system disclosed in US patent 4,246,663 is functional with round spas having significant deck space around the water. The system is not designed to easily collapse for storage and is not readily removable from the deck of the spa.

BRIEF SUMMARY OF THE INVENTION

The present invention provides a collapsable spa enclosure that may be retrofit onto existing spas without the need for structural modifications to the existing spa. The invention provides a spa enclosure that protects the users of the spas from insects, wind, sun, and/or prying eyes.

One embodiment of the invention provides a collapsable spa enclosure that is connected to the spa with a plurality of support blocks that are attached to the body of an existing spa. The support blocks are adjustable and may be attached to the spa body with mechanical fasteners or an adhesive. Another embodiment of the invention provides a collapsable spa enclosure that is attached to the spa with friction and a clamping force so that the existing spa is unaltered when the invention is removed from the spa.

In one embodiment of the invention, a continuous Velcro® seam is used to seal the enclosed area from insects. Another embodiment of the invention provides a drawstring that allows the lower edge of the enclosure to be drawn tight about the spa to prevent insects from entering the enclosed area.

The invention also provides an enclosure material that is supported by a skeletal frame. The enclosure material may be provided with different properties depending on the desired opaqueness of the material. The material breathes to allow steam to escape from the enclosed area while blocking the wind and sun. The material may also be configured to limit visibility from the outside to the inside of the enclosed area for privacy.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

Fig. 1 is a perspective view of a spa using the first embodiment of the collapsable spa enclosure of the present invention.

Fig. 2 is a view similar to Fig. 1 with the enclosure material removed and the skeletal frame exploded from the support blocks.

Fig. 3 is a section view taken along line 3-3 of Fig. 1 showing the top of a support block.

Fig. 4 is a section view taken along line 4-4 of Fig. 3 showing the connection between the skeletal frame and the support block.

Fig. 5 is a section view taken through the center of the spa and spa enclosure.

Fig. 5A is an enlarged view of the encircled portion of Fig. 5.

Fig. 6 is a view similar to Fig. 5 showing an alternative skeletal frame.

Fig. 6A is an enlarged view of the encircled portion of Fig. 6.

Fig. 7 is a front elevation view of the second embodiment of the collapsable spa enclosure of the present invention.

Fig. 8 is a section view taken through one of the support blocks of the collapsable spa enclosure of Fig. 7.

Fig. 9 is a section view taken through an alternate support block.

Similar numbers refer to similar parts throughout the specification.

DETAILED DESCRIPTION OF THE INVENTION

The first embodiment of the collapsable spa enclosure of the present invention is indicated generally by the numeral 10 in Figs. 1-6. The second embodiment of the collapsable spa enclosure of the present invention is indicated generally by the numeral 12 in Figs. 7 and 8. Enclosures 10 and 12 both provide the user of the spa 14 privacy as well as protection from insects, sun, and wind. Each enclosure 10 and 12 is also easily collapsable so that it may be taken down from spa 14 in a few moments and stored in a relatively small location. The inventors estimate that the storage size of the collapsed enclosure 10 or 12 would have an overall length of 4 to 10 feet with a diameter of less than six inches. These dimensions depend on the size of spa 14 and the thickness of the material used for the canopy 16 of enclosure 10 or 12. Enclosures 10 and 12 may be used with a wide variety of spas 14 and do not require structural modification of spas 14. Each spa 10 and 12 may also be erected by a single person without tools.

Each collapsable spa enclosure 10 and 12 generally includes canopy 16 that is supported on a frame 18 which is, in turn, supported by a plurality of support blocks 20 that are connected to the body (sidewall or deck) of spa 14. In the first embodiment of the invention, each support block 20 is connected to a corner of spa 14 with an appropriate adhesive 22 as depicted in Figs. 3 and 4. If the spa owner desires, he may connect support blocks 20 with mechanical fasteners such as screws or bolts. Such mechanical fasteners may be used

without problems when the spa body is fabricated from wood. Openings may be formed in blocks 20 for mechanical fasteners.

Support blocks 20 are fabricated from a flexible material that can be stretched or bent to fit snugly about the corner of spa 14. The material may be rubber or plastic. Each block 20 may be bent to fit a variety of corner radii and shapes. For example, each block 20 may be designed to fit a 90° corner or a 135° corner. Adhesive 22 may be preapplied on the inner surface of each support block 20 with a protective cover. The user simply removes the protective cover and presses support block 20 into place at the corner of spa 14.

Each support block 20 includes a holder that receives frame 18. In one embodiment, the holder is in the form of an opening 24 that extends down into the body of support block 20 from the upper surface of support block 20. Opening 24 is sized to frictionally receive the lower end of each vertical pole 26 of frame 18. Fig. 4 depicts an embodiment wherein the lower end of each vertical pole 26 includes a notch 28 that cooperates with locking fingers 30 carried by support block 20. Locking fingers 30 snap into notch 28 to prevent poles 26 from being pulled out of support blocks 20. At least one locking finger 30 is designed to be pivoted with respect to support block 20 so that pole 26 may be disengaged from support block 20 to remove frame 18 from spa 14. Other locking mechanisms may also be used. For example, a lock pin may be used with openings formed in the lower end of pole 26 and block 20. Opening 24 may also be sized to frictionally receive poles 26.

Canopy 16 may be connected to frame 18 in a variety of manners. In the first embodiment of the invention, canopy 16 includes a plurality of loops 40 sized to receive the vertical 26 and transverse 42 poles of canopy 16. Loops 40 may be on the inside or the outside of canopy 16. Canopy 16 may also be connected to frame 18 with Velcro® disposed on both canopy 16 and frame 18. Any of a variety of other known connectors may be used to secure canopy 16 to frame 18. Canopy 16 may also be loosely disposed over frame 18 with only the lower edge of canopy 16 being secured.

The inventors contemplate that brace members may be disposed between transverse poles 42 when enclosure 10 is large enough to require such braces to remain stable over spa 14. The upper ends of transverse poles 42 are connected together with a common connector 44 that may be in the form of a ring that passes through each upper end of transverse poles 42. The ring allows frame 18 to be collapsed without disconnecting poles 42 from the ring. Other types of connectors 44 may also be used. For example, a connector 44 that non-pivotably receives the upper ends of tubes 42. Other types may also non-slidably receive the upper ends of tubes 42. These types of connectors 44 may be "rigid" connectors and would have to be disconnected before collapsing frame 18. The ring described above and shown in the drawings allows the upper ends of tubes 42 to both pivot and slide with respect to the ring. The ring thus allows tubes 42 to immediately collapse toward each other.

Elbows 46 are used to connect the lower end of each transverse tube 42 to the upper end of each vertical tube 26. The connections are preferably frictional connections that do not require tools to assemble. Tubes 26 and 42 may be connected together through elbow 46 with an elastic cord in the well-known manner of tent poles so that elbows 46 are not lost when enclosure 10 is collapsed. Elbow 46, pole 42, or pole 26 may also include appropriate protrusions that prevent poles 26 and 42 from rotating with respect to elbow 46. Such protrusions may be biased locking pins that are received in detents to lock the connection in place.

An alternative frame construction is depicted in Fig. 6 and 6A wherein elbows 46 include pins 48 that create the connection between transverse pole 42 and elbow 46. Pins 48 may be designed to allow transverse poles 42 to pivot downwardly to a position substantially parallel with respect to vertical pole 26 to allow enclosure 10 to be collapsed for storage. The erected position depicted in Fig. 6 may be held with locks such as biased snap locks.

In the first embodiment of the invention, the lower end of canopy 16 is connected to the perimeter of spa 14 with a connector that extends around the entire length of the lower end. Velcro® may be used to form seam 50. The user installs half of Velcro® seam 50 about the perimeter of spa 14 as depicted in Fig. 2. The backing of the half of Velcro® seam 50 may be supplied with a pressure sensitive adhesive so that the user may easily connect seam 50 to the perimeter of spa 14. The seam may extend around support blocks 20 as

depicted in the drawings or may be positioned below blocks 20 as desired by the user. The lower edge of canopy 16 includes the other half of Velcro® seam 50. The user connects the halves of seam 50 to provide an insect-tight seam about the lower perimeter of canopy 16 when enclosure 10 is installed. Canopy 16 includes an appropriate door 60 that may be sealed with a zipper or Velcro®.

In the second embodiment of the invention depicted in Figs. 7-9, the user does not need to adhesively connect support blocks 20 to spa 14. In this embodiment, support blocks 20 are held in place with a clamping strap 70 that is ratcheted or pulled into a tight, clamping position as depicted in Fig. 7. Strap 70 frictionally holds support blocks 20 to the side of spa 14 where they support frame 18.

In the second embodiment of the invention, frame 18 is formed from two or four flexible rods 74 that may be bent to form the dome depicted in Fig. 7. When only two rods 74 are used, rods 74 extend from one side of the spa to another when four rods 74 are used, a central connector non-pivotably or rigidly holds the upper ends of rods 74 so that a dome is formed.

Each support block 20 defines a channel 80 at its outer surface or through the body of block 20. Channel 80 is sized to receive strap 70 and to prevent strap 70 from slipping from block 20. The inner surface of support block 20 may be formed in a variety of patterns to increase its ability to frictionally hold itself against the outer surface of spa 14. A material with a high coefficient of friction may also be used on the inner surface of blocks 20

The user installs enclosure 12 by first locating support blocks 20 about different portions of spa 14. The user also positions poles 74 in loops 40 of canopy 16. The user connects each upper end of pole 74 with connector 44. The user may then proceed to cinch strap 70 about blocks 20 until all blocks 20 frictionally engage the outer surface of spa 14. The user may place strap 70 outside of canopy 16 or inside of canopy 16 as depicted in Fig. 8. When strap 70 is positioned inside canopy 16, a drawstring 82 is used to cinch the lower edge of canopy 16 about spa 14. If the user is working alone, he then consecutively pushes support blocks 20 up the edge of spa 14 until they are located in a desirable location. When the user has assistance, support blocks 20 may be held in the desired position while the user tightens strap 70 with buckle or ratchet 76. Buckle or ratchet 76 may be carried by strap 70 or by one of blocks 20. One ratchet 76 may be a rotating ratchet that frictionally engages strap 70 or winds strap 70 around a portion of ratchet 76. As shown in Fig. 9, strap 70 is positioned outwardly of rods 74 so that block 20 tightens against rods 74 to help clamp them in place.

In another embodiment of the invention, support blocks 20 are permanently connected to the lower ends of rods 74. In this embodiment, support blocks 20 are removed from spa 14 with frame 18 and stored with frame 18. Blocks 20 may be integrally formed at the bottom of frame 18.

In the foregoing description, certain terms have been used for brevity, clearness, and understanding. No unnecessary limitations are to be implied

therefrom beyond the requirement of the prior art because such terms are used for descriptive purposes and are intended to be broadly construed.

Moreover, the description and illustration of the invention is an example and the invention is not limited to the exact details shown or described.